

**GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM**  
**Instrument Procedures Group**  
**May 1, 2007**  
**HISTORY RECORD**

**FAA Control # 07-01-272**

**Subject:** Using an ODP in lieu of the Published Missed Approach Procedure

**Background/Discussion:** The AIM contains language that recommends that a pilot who commences a missed approach below the MDA/DA or after the MAP use the runway's ODP instead of the published missed approach. This is contrary to adherence to the air traffic clearance that authorized the instrument approach procedure. Further, it becomes more problematic when an IAP has circling-only minimums.

In any case, it is both bad advice and causes the pilot to be in violation of his air traffic clearance. In some cases a pilot can obtain a timely amendment to an air traffic clearance; in other cases, such as relay through an FSS communications outlet, he most likely cannot.

**AIM 5-4-21 g:** *"Missed approach obstacle clearance is predicated on beginning the missed approach procedure at the Missed Approach Point (MAP) from MDA or DA and then climbing 200 feet/NM or greater. Initiating a go-around after passing the published MAP may result in total loss of obstacle clearance. **To compensate for the possibility of reduced obstacle clearance during a go-around, a pilot should apply procedures used in takeoff planning.** Pilots should refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the U.S. TERMINAL PROCEDURES publication. (emphasis NBAA's)*

**AIM 5-5-5** (Pilot/Controller Responsibilities): *"Missed Approach*

*a. Pilot.*

*1. Executes a missed approach when one of the following conditions exist:*

*(a) Arrival at the Missed Approach Point (MAP) or the Decision Height (DH) and visual reference to the runway environment is insufficient to complete the landing.*

*(b) Determines that a safe approach or landing is not possible (see subparagraph 5-4-21g).*

*(c) Instructed to do so by ATC.*

*2. Advises ATC that a missed approach will be made. Include the reason for the missed approach unless the missed approach is initiated by ATC.*

***3. Complies with the missed approach instructions for the IAP being executed from the MAP, unless other missed approach instructions are specified by ATC.***

*4. If executing a missed approach prior to reaching the MAP, fly the lateral navigation path of the instrument procedure to the MAP. Climb to the altitude specified in the missed*

*approach procedure, except when a maximum altitude is specified between the final approach fix (FAF) and the MAP. In that case, comply with the maximum altitude restriction. Note, this may require a continued descent on the final approach.*

**b. Controller.**

- 1. Issues an approved alternate missed approach procedure if it is desired that the pilot execute a procedure other than as depicted on the instrument approach chart.*
- 2. May vector a radar identified aircraft executing a missed approach when operationally advantageous to the pilot or the controller.*
- 3. In response to the pilot's stated intentions, issues a clearance to an alternate airport, to a holding fix, or for reentry into the approach sequence, as traffic conditions permit. (emphasis NBAA's)."*

**§ 91.123 Compliance with ATC clearances and instructions.**

- (a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance unless an amended clearance is obtained, an emergency exists, or the deviation is in response to a traffic alert and collision avoidance system resolution advisory. However, except in Class A airspace, a pilot may cancel an IFR flight plan if the operation is being conducted in VFR weather conditions. When a pilot is uncertain of an ATC clearance, that pilot shall immediately request clarification from ATC.*

The cited AIM language is attempting to deal with the issue of the phase of flight commonly called "the balked landing." To NBAA's knowledge, no where else in FAA publications to pilots or operators does the FAA attempt to recommend a course of action for balked landings under instrument flight conditions. This is similar to the engine inoperative flight path, which is solely an operator responsibility. There is regulatory support for engine inoperative flight paths; there is not for balked landing issue.

**Recommendations:** The AIM language should delete any reference/recommendation about "converting" authorized missed approach procedures into unauthorized ODPs. When a pilot departs an airport, authorization to use the ODP is usually implied. Not so in the case of a missed approach. AIM language should be added to discuss the hazards of missing an approach where the MDA/DA has a high HAA/HAT (or early MAP) and that landing must be assured (or at least the ability to remain visual in the airport's traffic pattern until a runway becomes available) in low-performance aircraft prior to leaving the protection of the IAP.

**Comments:** This recommendation affects the Aeronautical Information Manual and related directives to ATC personnel.

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**Date:** April 5, 2007

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**Initial Discussion Meeting 07-01:** New Issue presented by Rich Boll, NBAA. NBAA is concerned over the AIM language that recommends a pilot, who commences a missed approach below the MDA/DA or after the MAP, use the runway's ODP instead of the published missed approach. This is contrary to adherence to the air traffic clearance that authorized the instrument approach procedure. Further, it becomes more problematic when an IAP has circling-only minimums. In any case, NBAA believes it is both bad advice and causes the pilot to be in violation of his air traffic clearance. In some cases a pilot can obtain a timely amendment to an air traffic clearance; in other cases, such as relay through an FSS communications outlet, he most likely cannot. NBAA is recommending the AIM language delete any reference/recommendation about "converting" authorized missed approach procedures into unauthorized ODPs. Tom Schneider, AFS-420, stated that he believed that the AIM is correct. Once a pilot who has to go-around (balked landing, tower clearance cancelled, etc.) after leaving the MDA or passing the MAP and is committed for landing, the "TERPSed" missed approach is no longer any good, ergo the AIM language is correct. Chasing after the charted missed approach track could prove disastrous; however, the ODP will provide a safe extraction. Ernie Skiver, AFS-410, agreed with Tom stating that from landing to take-off mode, the ODP was a safer option. Brad Rush, AJW-321, stated this may be true for places like Eagle, CO, but do we want to endorse the practice everywhere. Frank Flood, ACPA, noted that the aircraft will fly the coded data base missed approach track. Frank added that 99% of Air Canada pilots will fly the charted missed approach instructions in this situation. James Taylor, USAF/AIS agreed that better missed approach guidance should be published in the AIM to highlight the hazards of a late missed approach. Ron Graham, Air Canada, stated that pilots must review all options prior to getting into a late missed approach situation. Lance Christian, NGA, noted that there are many airports in rugged terrain areas where chasing the published missed approach could be fatal. Tom agreed to take the issue back to AFS-410/420 for updated AIM guidance.

**ACTION:** AFS-410 and 420.

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**MEETING 07-02:** Tom Schneider, AFS-420, briefed that new AIM language was developed in concert with AFS-410 and has been submitted for publication in the August, 2008 AIM. The change revises paragraph 5-4-21-g as follows (revised/added text is shown in red):

**"5-4-21-g.** Missed approach obstacle clearance is predicated on beginning the missed approach procedure at the Missed Approach Point (MAP) from MDA or at the DA. Some missed approach procedures require commencement of an immediate turn and/or climb of 200 ft/nm or more at the MAP. In these instances, initiating a go-around after passing the published MAP (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within missed approach procedure protected area. To compensate for the possibility of reduced obstacle clearance during a balked landing/go-around, a pilot should consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles. At some airports, pilots may wish to refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the U.S. TERMINAL PROCEDURES publication. Depending upon the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may wish to take one or more of the following actions after initiating a balked landing/go-around beyond the published MAP:

1. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure (for example, a straight-ahead climb, as rapid as possible, may be all that is necessary to re-join the missed approach segment; re-joining a turning missed approach may also be possible if the turn point has not yet been reached.).
2. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).
3. Maintain visual conditions and reattempt landing, if practicable.
4. Where available, fly a published obstacle departure procedure (ODP) for the relevant runway.
5. Comply with ATC instructions when Radar vectors have been issued or can be requested.

**NOTE:** *As soon as possible, pilots should coordinate with and/or inform ATC of his or her intended actions.*

**Editor's Note:** *Because this proposed change was not available for discussion at the meeting, the issue will remain open until published in the August 2008 AIM.*

**Item Open - Pending Publication.**

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**MEETING 08-01:** Tom Schneider, AFS-420, briefed that new AIM language was developed in concert with AFS-410 and has been submitted for publication in the August, 2008 AIM. The change adds a new paragraph 5-4-21-c (remaining paragraphs are re-numbered) as follows:

c. Initiating a go-around after passing the published MAP (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within missed approach procedure protected area. To compensate for the possibility of reduced obstacle clearance during a balked landing/go-around, a pilot should consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles. At some airports, pilots may wish to refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the U.S. TERMINAL PROCEDURES publication. Depending upon the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may wish to take one or more of the following actions after initiating a balked landing/go-around beyond the published MAP:

1. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure (for example, a straight-ahead climb, as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach may also be possible if the turn point has not yet been reached.).

2. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that would not have been factored in the design of the published missed approach procedure since the climb would have started earlier).
3. Maintain visual conditions and reattempt landing, if practicable.
4. Where available, fly a published obstacle departure procedure (ODP) for the relevant runway.
5. Comply with ATC instructions when Radar vectors have been issued or can be requested.

*NOTE: As soon as possible, pilots should coordinate with and/or inform ATC of their intended actions.*

Tom advised that this change had been submitted for publication. If anyone has any requested changes to the above text to forward them to him NLT June 15 in order to allow time for coordination to meet the July 31 cutoff for the February AIM. Roy Maxwell, Delta Air Lines, stated that the change supports language published in AC 120-29A (***Editor's Note: see paragraphs 4.3.1.8 and 6.2.16***). Rich Boll, NBAA, suggested this change be included in the next revision to the IPH and also forwarded to AFS-600/800 for inclusion in Practical Test Standards. Kevin Comstock, ALPA, recommended that the ACF should follow up with the appropriate FAA branches (including the ATO) and other organizations (e.g., Jeppesen, LIDO, etc.) to make sure ACF recommendations have been properly implemented. There have been times in the past where ACF has closed an issue before it is fully resolved and sometimes we find out years later that the issue still exists. (***Editor's Note: The Chair would like to add for the record that this may have been true in the past; however, current practice is to leave issues open until fully resolved***). Kevin added the ACF also needs to do a better job of making sure all parties have been coordinated with before changes are made and record who from what organizations signed off on the change. This will ensure better record keeping and provide the ability to justify changes and answer questions after implementation. Kevin also recommended that the Terminal Service Unit develop controller awareness training regarding the possibility of a pilot using the ODP in lieu of the published Missed Approach Procedure (MAP); Dan Diggins, AJT-22, agreed to follow up on this. Frank Flood, ACPA, mentioned San Francisco as an airport of concern noting that most (if not all) air carrier pilots will fly the missed approach because it is what is programmed in the data base. Richard Kagehiro, AJE-31, questioned whether the Forum was considered an Advisory Committee. Bill Hammett, AFS-420 (ISI), replied no and provided a verbal history on the coordination of Order 7910.5, *Aeronautical Charting Forum*, through FAA's General Counsel that allowed exemption of the Forum from the Federal Advisory Committee Act. Richard then asked whether the AIM change was coordinated through Air Traffic. Tom replied that he would have to check this process. Rich then asked what regulatory guidance allows pilots to use an ODP in lieu of a published MAP. Tom agreed to research this. The following IOUs were agreed: 1) Tom will track the AIM submission and prepare follow up memos to AFS-600/800. 2) Dan will ensure controller awareness training material is developed. **ACTION: AFS-420 and AJT-22.**

***Editor's Comment:*** *On Thursday, the last day of the Charting Group's meeting, Tom Schneider, AFS-420 and Chair of the ACF-IPG, briefed that on Wednesday, Richard Kagehiro, AJE-31, advised that he had contacted the ATO Publications Group, AJR-31, and taken action to stop the publication of the AFS-400 requested AIM change noted above. Tom had hoped that Richard would have attended the last day of the meeting to explain his rationale to the Forum; however, Richard was not in attendance. Tom briefed that this action is setting a dangerous precedent.*

*The AIM has an office of primary responsibility (OPR) for each paragraph and AFS-400 is OPR for paragraph 5-4-21. It is concerning that an office other than the OPR, who may not fully understand the reason for the change, could have the influence to stop changes requested by the OPR without proper justification. Tom added that he had discussed the AIM change with Dan Diggins, AJT-22, and he, as the Terminal Service Unit representative to the ACF-IPG, has no issue with the proposed change. Roy Maxwell, Delta Air Lines, again emphasized that the language in the AIM change echoes and clarifies guidance that is already published in AC 120-29A. Tom will work this development through AFS-400 and ATO channels. As of May 16, consensus on the proposed AIM change could not be reached between AFS-400, AJW-3, AJE-31, and AJT-22; therefore, the AIM change originally submitted for publication on July 31 has been withdrawn. A follow-on meeting will be scheduled with the aforementioned parties to reconcile the differences and prepare a submission for the March 12, 2009 AIM publication.*

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**MEETING 08-02:** Tom Schneider, AFS-420, briefed that after the last meeting, revised AIM language was coordinated through AFS-400, AJT-22, AJE-31, and AJR-32. However, prior to the revision being forwarded for publication, language published in the Federal Register on January 8, 1981, regarding Part 91.116(e) which is now Part 91.175(e) (unchanged) prompted a second look at the AIM verbiage. The following is quoted from the preamble (emphasis added):

“Another subject on which comments were received relates to the § 91.116(e) requirement to immediately initiate an "appropriate" missed approach if visual reference is lost. The commenters correctly note that it is unsafe in some cases to initiate an immediate missed approach which strictly follows the published procedure. This, however, is the reason why the word "appropriate" missed approach is used. Under § 91.116(e) pilots must continue to be aware that the published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point. If the aircraft initiates a missed approach at a point prior to the missed approach point, from below MDA or DH, or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure. In this situation obstacle clearance is the pilot's responsibility. When a missed approach is initiated in this situation, the pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight and/or minimum turning altitudes in the prescribed missed approach procedure, aircraft performance, visual climb restrictions, charted obstacles, IFR departure procedures, takeoff visual climb requirements as expressed by nonstandard takeoff minima, or other factors not specifically expressed by the approach procedures. During a missed approach, the aircraft must be on, or must re-intercept, a published segment of the procedure at or above the altitude specified in the procedure, and must maintain a climb gradient equal to or greater than the standard (1:40 or 2.5%) unless otherwise published, for obstacle clearance to be ensured by the published missed approach procedure alone. For these reasons the wording of former § 91.117(b)(2) with respect to an "appropriate" missed approach is retained in § 91.116(e).

The emphasis on the word “appropriate” prompted AFS-420 to draft another revision to the verbiage for AIM paragraph 5-4-21. The following recommended revision was presented to the ACF-IPG for discussion:

“Initiating a go-around after passing the published MAP (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within missed approach procedure protected area. To compensate for the possibility of reduced obstacle clearance during a balked landing or go-around, the pilot becomes responsible for obstacle clearance and should consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles. At some airports, pilots may wish to refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the US TERMINAL PROCEDURES publication. Depending on the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may wish to take one or more of the following actions after initiating a balked landing/go-around beyond the published MAP:

1. Contact ATC as soon as possible and comply with ATC instructions when RADAR vectors have been issued or can be requested.
2. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure, (i.e., straight ahead climb as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach may also be possible if the turn point has not yet been reached.).
3. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).
4. Maintain visual conditions and re-attempt landing, if practicable.
5. Where available consider executing the published ODP for the relevant runway.

**NOTE:** *ATC applies separation between an aircraft making an instrument approach (including the corresponding missed approach procedure, and the missed approach holding pattern and altitude) and other subsequent arrivals and other known IFR aircraft. A published ODP for the relevant runway does not always correspond with the missed approach procedure. Additionally, the published ODP does not always specify an altitude and/or fix at which to hold. It is imperative that pilots advise ATC as soon as possible of his or her intended actions if a landing cannot be completed. Pilots must be aware that separation between the aircraft and other traffic may not be maintained if the pilot executes a maneuver other than the published missed approach procedure."*

This version also prompted much discussion. Kevin Comstock, ALPA, expressed concern that the language requires the pilot to be responsible for obstacle clearance when flying a published procedure. Rich Boll, NBAA, stated that after reading the preamble, NBAA agrees that further change is required and offered his assistance in developing the language. He also stated that changes are required to other associated pilot educational material and ATC directives. Roy Maxwell recommended the change include verbiage for Part 121 and 135 operators. John Swigart, AFS-470, stated that the language should support what pilots are trained to do. Tom Schneider, AFS-420, expressed concern that the cautionary note emphasizing that ATC separation with other traffic may be lost, could cause pilots to chase a published missed approach in lieu of conducting a more “appropriate” maneuver to execute a go-around. Lastly, Paul Ewing, AJR-37 (AMTI), emphasized that any changes must be coordinated through the En Route Service Unit, AJE-31, as they had objected to the original proposal. Tom Schneider, agreed to prepare a revised draft in unison with the ALPA and NBAA representatives for further AFS-400 - ATO coordination. Rich Boll, NBAA, agreed to prepare a listing of associated Orders and directives that also require change. **ACTION: AFS-420 and NBAA.**



**Editor's Note:** After the meeting, the following recommended verbiage was developed jointly by AFS-420, NBAA, and ALPA, and forwarded to AFS-400 for coordination within AFS and the ATO. Changes to the current AIM are shown in red text:

**Proposed AIM language for AIM paragraph 5-4-21 (Rv 10: 11-4-2008)**

"Initiating a go-around after passing **the Missed Approach Point (MAP)** (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within **published** missed approach procedure protected area **and the pilot becomes responsible for obstacle clearance**. To compensate for this situation, consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles **when choosing a path to fly**. Title 14, Code of Federal Regulations Part 91.175(e) recognizes this possibility and intentionally uses the word "appropriate" when describing the missed approach procedure. Therefore, at some airports, pilots **should** refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the US TERMINAL PROCEDURES publication. Depending on the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may **choose** to take one or more of the following actions **when** initiating a go-around **after passing** the published MAP:

1. Contact ATC as soon as possible and comply with ATC instructions when RADAR vectors have been issued or can be requested.
2. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure, (i.e., straight ahead climb as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach **segment** may also be possible if the turn point has not yet been reached.).
3. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).
4. Maintain visual conditions and re-attempt landing, if practicable.
5. Where available, consider executing the published Obstacle Departure Procedure (ODP) **(or operator established one engine inoperative departure procedure per 14 CFR Part 91.175(f)(4))** for the relevant runway.

**NOTE:** ATC applies separation between an aircraft making an instrument approach (including the corresponding **published** missed approach procedure, and the missed approach holding pattern and altitude) and other subsequent arrivals and other known IFR aircraft. A published ODP for the relevant runway does not always correspond with the **published** missed approach procedure. Additionally, the published ODP does not always specify an altitude and/or fix at which to hold. Pilots must be aware that separation between the aircraft and other traffic may not be maintained **regardless of the procedure chosen if the pilot executes a go-around from a point beyond the MAP**. Therefore, it is imperative that pilots advise ATC as soon as possible of his or her intended actions if a landing cannot be completed."

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**MEETING 09-01:** Tom Schneider, AFS-420, briefed that after the last meeting, revised AIM language was again developed jointly between NBAA and AFS-420 to resolve all concerns. The revised language, which follows below, was again coordinated through AFS-400, AFS-200, AFS-800, AJT-22, AJE-31, AJR-32, as well as the other key industry interested parties, ALPA and Delta Airlines. Only one requested revision was received from AJT-22 and accepted. Believing everyone was in agreement, AFS-420 forwarded the following revised language to AFS-400 for formal coordination and inclusion in the August 2009 AIM change.

**Proposed AIM language for AIM paragraph 5-4-21h (Rv 11, 03-31-2009)**

Initiating a go-around after passing the Missed Approach Point (MAP) (for example, a balked landing) may result in total loss of obstacle clearance because the aircraft flight path may not fall within published missed approach procedure protected area and the pilot becomes responsible for obstacle clearance. To compensate for this situation, consider the airport operating environment, including known natural (trees/vegetation) and man-made obstacles when choosing a path to fly. Title 14, Code of Federal Regulations Part 91.175(e) recognizes this possibility and intentionally uses the word "appropriate" when describing the missed approach procedure. Therefore, at some airports, pilots should refer to airport obstacle and departure data prior to initiating an instrument approach procedure. Such information may be found in the "TAKE-OFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES" section of the US TERMINAL PROCEDURES publication. Depending on the airport operating environment, characteristics of the published missed approach procedure, overall aircraft performance capability, and other relevant considerations, pilots may choose to take one or more of the following actions when initiating a go-around after passing the published MAP:

1. Where practical, re-establish the aircraft laterally and vertically on the published missed approach procedure, (i.e., straight ahead climb as rapidly as possible, may be all that is necessary to re-join the missed approach segment. Re-joining a turning missed approach segment may also be possible if the turn point has not yet been reached.).
2. Adjust aircraft climb performance as necessary for the local environment (i.e., climb as rapidly as possible to avoid obstructions that were not a factor in the design of the published missed approach procedure).
3. Maintain visual conditions and re-attempt landing, if practicable.
4. Where available, consider executing the published Obstacle Departure Procedure (ODP) (or operator established one engine inoperative departure procedure per 14 CFR Part 91.175(f)(4)) for the relevant runway.

**NOTE:** *ATC applies separation between an aircraft making an instrument approach (including the corresponding published missed approach procedure, and the missed approach holding pattern and altitude) and other subsequent arrivals and other known IFR aircraft. A published ODP for the relevant runway does not always correspond with the published missed approach procedure. Additionally, the published ODP does not always specify an altitude and/or fix at which to hold. Pilots must be aware that separation between the aircraft and other traffic may not be maintained regardless of the procedure chosen if the pilot executes a go-around from a point beyond the MAP. Therefore, it is imperative that pilots advise ATC as soon as possible of his or her intended actions if a landing cannot be completed.*

However, once again, at the last minute, an ATO non-concur was received, this time from the Terminal Service Unit, AJT-22. Dan Diggins, AJT-22, briefed that his office was responsible for the non-concur. Although their request to have “contact ATC” as the number 1 option removed, was granted, they now believe that all approaches should have a missed approach protected to touchdown. Tom Schneider, AFS-420, responded that the current AIM guidance, which directs the pilot to fly the ODP, applies to all approaches today. This is not the intent, as is explained in the Preamble, of Part 91.175(e) which directs an “**appropriate** missed approach procedure”. Rich Boll, NBAA, agreed that the currently published AIM language is not appropriate; however, at some airports, chasing the published missed approach is not the best course of action either. He agrees that TERPS should protect to touchdown. Tom responded that applying Category II/III missed approach criteria to all approaches is ludicrous. Bill Hammett, AFS-420 (ISI) agreed and cautioned the proponents to be careful of what they ask for. Applying missed approach protection to touchdown will raise minimums to the point where it would severely impact the NAS. Mike McGinnis, APA, noted that commercial operators have one engine inoperative (OEI) procedures available. Roy Maxwell, briefed that Part 121 operators have an obligation to assess take off obstacles and consider OEI. It appears we are trying to assess two scenarios with one topic and the group is having a problem trying to separate the two issues. In the event of an engine failure during go-around, most air carriers will revert to the takeoff OEI procedures or the published ODP. In this instance flying a normal missed approach is way down on the pilots list. Many carriers will also fly the OEI or ODP after a balked landing if the missed approach point is some distance from the runway or the missed approach procedure turns before the runway. Roy added that the number of airports that are impacted is probably limited. It is a mistake for the FAA to try and protect for abnormal operations through TERPS. Carriers need to solve the problem and then ensure ATC is advised. Kevin Comstock, ALPA, agreed with Roy and added that he had coordinated with several ALPA member airlines. He stated that the proposed AIM guidance is similar to what is already included in many carriers’ manuals and carried out by crews as part of the approach briefing. Additionally, changing TERPS to protect for baulked landings by putting all missed approach points at the departure end of the runway was discussed during the development of Order 8260.52 and it was determined that this was not a good course to follow. Mike Frank, AJT-22, stated that the phrase “appropriate missed approach” is what is causing problems in the ATC world. ATC needs to know exactly what a pilot will do rather than publishing a smorgasbord of options. Mike suggested guidance for various scenarios be developed, e.g., controlled vs. uncontrolled airfield, IMC vs. VMC, etc. This guidance would then be used to develop a list of options in the order to be used so ATC will be aware of what the pilot will do in a given scenario. Roy Maxwell, Delta, briefed that Delta was currently merging with Northwest and both airlines’ procedures are undergoing review to develop a single set of policies and procedures for both carriers. The first priority is to “miss the rocks” when that is the biggest danger, and then advise ATC to avoid potential traffic conflicts. Roy recommended that the proposed AIM change move forward as previously drafted and re-structure it later if necessary. Tom asked the question, what does ATC expect a pilot to do in the event of a balked landing today, Gary Fiske, AJT-22, responded ATC expects the aircraft to execute the published missed approach and communicate with ATC. Dan stated that the ATO believes the proposed AIM language is a half-baked solution and the issue needs to be fully vetted. The guidance needs more structure. Tom disagreed again stating that the current AIM guidance directs the ODP be used and all agree this is not the intent. Jim Ryan, AFS-200, asked whether it is the ATO’s intent to prioritize pilot actions in the event of a balked landing. Paul Ewing, AJR-37(AMTI) stated this would be good and remove all doubt for controllers. Tom re-capped the discussion again emphasizing that the current AIM guidance is misleading pilots to believe they must fly the ODP and this is not


what is intended. The group consensus agrees this is true. Tom offered that there are only two options: 1) do nothing and let the current incorrect AIM guidance stand or 2) change the AIM wording as proposed. Rich Boll, NBAA stated that the current guidance is not adequate and something must be done. Additionally, this issue is not addressed in the instrument procedures handbook (IPH) or practical test standards (PTS). Dan Diggins, AJT-22 again stated the AIM guidance needed 'structure' and recommended an ad hoc group be formed to fully vet the issue. Tom responded that an ad-hoc group would be OK provided that all interested parties participate in the discussion and agree that the group's consensus would be final. He has personally vetted this issue through all the players for the past 1.5 years only to have someone continually non-concur at the last minute after an agreement had been supposedly reached. Tom also stated that he would not chair the group. Rich Boll agreed to chair the ad hoc group, which will develop finalized language for AIM paragraph 5-4-21h and develop recommendations for changes to associated ATC Orders, the IPH, etc. A sign up sheet was circulated and those listed below volunteered. Others who wish to participate are encouraged to contact Rich directly.

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Charles Hinson	MITRE	703-983-4578	<a href="mailto:c.hinson@mitre.org">c.hinson@mitre.org</a>
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Steve Serur	ALPA	703-689-4333	<a href="mailto:steve.serur@alpa.org">steve.serur@alpa.org</a>
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#### **ACTION: NBAA.**

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**MEETING 09-02:** Rich Boll, NBAA, briefed that at the last meeting he agreed to chair a sub group to address this issue; however, the group did not meet because one of the air traffic representatives stated that they wanted to pursue this issue at a higher level within the FAA. Dan Diggins, AJT-28, stated that he was the individual that elevated the issue. The ATO Terminal and En Route Service Units both are concerned over the smorgasbord of pilot options the proposed language provided. Dan stated that although the original proposed AIM revision appeared satisfactory at first, upon a further more detailed review, they believe it doesn't appear necessary. Dan added that AJT-2 had written a memorandum to AFS-1 and AJW-1 to determine exactly where problems exist. Roy Maxwell, Delta, advised that as a result of the Delta/Northwest merger, it was noted that each carrier had a different procedural application of AC 120-91. Delta specified the ODP for a balked landing, whereas Northwest did not. Noting that Air Traffic preferred pilots to fly the published missed approach, Delta Operations reviewed over 200 airports where Delta and Northwest service. There were a limited number (approximately 10%) where there were problems. John Blair, AFS-260, cautioned that the group must not get locked in to viewing this is a carrier problem at major airports. It is a problem at many smaller airports. Tom Schneider, AFS-420, emphasized that the proposed guidance specifies to use the published missed approach first and only use the ODP as a last ditch maneuver. Paul Eure, AJE-31, asked Roy

whether ATC was advised of those airports deemed to have a problem. Roy responded, no; it is a carrier responsibility. Rich stated that there is nothing new here and no new guidance is required. He added that the final draft that was presented to the ACF included verbatim text from the preamble of the Notice of Final Rule for Part 91.116 (now 91.175). On behalf of NBAA, Rich stated he cannot understand how the ATO can non-concur with the proposed AIM language since it is based on the following explanatory guidance material published in the Federal Register on this subject, unless they want to take the matter to General Counsel. The following is an excerpt of the Federal Register preamble for the Final Rule for Part 91.116, *Take off and landing under IFR*, (now 91.175) which was published on January 8, 1981. The entire Preamble may be accessed here  .

“Another subject on which comments were received relates to the § 91.116(e) requirement to immediately initiate an “appropriate” missed approach if visual reference is lost. The commenters correctly note that it is unsafe in some cases to initiate an immediate missed approach which strictly follows the published procedure. This, however, is the reason why the word “appropriate” missed approach is used. Under § 91.116(e) pilots must continue to be aware that the published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point. If the aircraft initiates a missed approach at a point prior to the missed approach point, from below MDA or DH, or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure. In this situation obstacle clearance is the pilot’s responsibility. When a missed approach is initiated in this situation, the pilot must consider other factors such as the aircraft’s geographical location with respect to the prescribed missed approach point, direction of flight and/or minimum turning altitudes in the prescribed missed approach procedure, aircraft performance, visual climb restrictions, charted obstacles, IFR departure procedures, takeoff visual climb requirements as expressed by nonstandard takeoff minima, or other factors not specifically expressed by the approach procedures. During a missed approach, the aircraft must be on, or must re-intercept, a published segment of the procedure at or above the altitude specified in the procedure, and must maintain a climb gradient equal to or greater than the standard (1:40 or 2.5%) unless otherwise published, for obstacle clearance to be ensured by the published missed approach procedure alone. For these reasons the wording of former § 91.117(b)(2) with respect to an “appropriate” missed approach is retained in § 91.116(e). (Emphasis added)

Gary Fiske, AJT-28, asked does the final rule mean that the options must be in the AIM. Roy stated again that it is the pilot/operator responsibility to determine what to do after passing the MAP. Action at that point is outside the presumptions of procedure designers and ATC; it is a performance issue. Gary asked how is the controller to know what the pilot is doing. Rich responded that in this instance, the situation is a de facto emergency and it is incumbent on the pilot to advise ATC. John Blair, AFS-260, reminded everyone that the primary goal is to keep the aircraft from hitting the rocks. The AIM provides guidance and ATC is secondary. Dan Diggins closed by saying that the request for airport evaluations may be a moot point if the rule is in place. Rich provided the following proposed language for AIM paragraph 5-4-21h, which he revised to be more closely based on the preamble language provided above and requests AFS-410 consider it for inclusion in the AIM:

**Proposed AIM language for AIM paragraph 5-4-21h (Rv 12, NBAA, 10-27-2009)**

A clearance for an instrument approach procedure includes a clearance to fly the published missed approach procedure, unless otherwise instructed ATC. The published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point. If the aircraft initiates a missed approach at a point prior to the missed approach point, from below MDA or DH, or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure. During pre-approach planning, the pilot should assess the actions to be taken in the event of a balked landing beyond the missed approach point or below the MDA or DA(H) based on the anticipated weather conditions and available aircraft performance. If balked landing occurs at a position where it is no longer possible to fly the published missed approach and alternative missed approach instructions are not available from ATC, obstacle clearance is the pilot's responsibility. 14 CFR 91.175 authorizes the pilot to fly an appropriate missed approach procedure. When a missed approach is initiated in this situation, the pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight and/or minimum turning altitudes in the prescribed missed approach procedure, aircraft performance, visual climb restrictions, charted obstacles, **takeoff obstacle departure procedure**, takeoff visual climb requirements as expressed by nonstandard takeoff minima, or other factors not specifically expressed by the approach procedures. If the pilot executes any procedure other than the published missed, they should advise ATC as soon as possible with current actions and intentions.

**ACTION: AFS-410 and AJT-28.**

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**MEETING 10-01:** At the last meeting, it was noted that Dan Diggins (formerly of AJT-28) stated that he had initiated a memorandum from AJT-2 to AFS-1 and AJW-3 to raise the issue to a higher level within the FAA. The memorandum was sent via email on October 22, 2009; however, there is no record of it being received by either office. A copy was obtained shortly before the 10-01 meeting and Bruce McGray, AFS-410, stated that his office is coordinating an AFS response that hopefully will clarify what is/is not regulatory. Mike Frank, AJT-28, asked the status of the sub group that was supposed to be working the issue. Rich Boll, NBAA, stated that he was awaiting further input from Dan on the internal FAA position and did not call a meeting. Due to the confusion surrounding receipt of the memo, it was decided that the sub group would meet after AFS-410 had prepared and coordinated a response to the AJT-2 memo.

***Editor's Note:*** *Although not discussed at this meeting, it is noted that AJT-28 has an IOU from the last meeting to evaluate the preamble language for Part 91.116 (now 91.175) and re-assess the need for a review to determine exactly what airports are impacted. The IOU is continued.*

**ACTION: AFS-410, NBAA, and AJT-28.**

The most recent NBAA recommended language for AIM 5-4-21h that incorporates language from the preamble of 14 CFR Part 91.116 (now 91.175) is shown on the next page.

## Proposed Language for AIM Paragraph 5-4-21h (March 5, 2010)

(Blue Text Extracted From the Preamble 14 CFR 91.116)  
(Red Text Represents Updated Terminology or Clarification)

A clearance for an instrument approach procedure includes a clearance to fly the published missed approach procedure, unless otherwise instructed by ATC. The published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point. If the aircraft initiates a missed approach at a point prior to the missed approach point, from below MDA or DH, or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure. During a missed approach, the aircraft must be on, or must re-intercept, a published segment of the procedure at or above the altitude specified in the procedure, and must maintain a climb gradient equal to or greater than the standard (40:1 or 2.5%) unless otherwise published, for obstacle clearance to be ensured by the published missed approach procedure alone.

Prior to initiating an instrument approach procedure, the pilot should assess the actions to be taken in the event of a balked (rejected) landing beyond the missed approach point or below the MDA or DA (H) considering the anticipated weather conditions and available aircraft performance.

If a balked (rejected) landing occurs at a position where in the pilot's judgment it is no longer appropriate to fly the published missed approach procedure, obstacle clearance is the pilot's responsibility. 14 CFR 91.175(e) authorizes the pilot to fly an appropriate missed approach procedure, which in this situation is one that ensures obstruction clearance. The pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight and/or minimum turning altitudes in the prescribed missed approach procedure. The pilot must also consider aircraft performance, visual climb restrictions, charted obstacles, published obstacle departure procedure, takeoff visual climb requirements as expressed by nonstandard takeoff minima, other traffic expected to be in the vicinity, or other factors not specifically expressed by the approach procedures.

The pilot **must** advise ATC as soon as practicable of their current actions and intentions **IF** executing any procedure other than the published missed approach procedure or any ATC-assigned alternative missed approach procedure.

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**MEETING 10-02:** Mike Frank, AFS-52 (formerly of AJT-28), briefed that Mike Singletary, Manager of AJT-28, is OK with the proposed language for AIM paragraph 5-4-21h, dated March 5, 2010, as published in the minutes of the last ACF-IPG meeting. He stated that AJT-28 would like one final meeting/telcon with AFS-410 and NBAA to ensure all are in agreement. Bill Hammett, AFS-420 (ISI), briefed that AFS-410 has forwarded a change to paragraph 5-4-21h to the AIM office for publication; however, the last paragraph has been changed from the March 5 version (the preceding paragraphs are unchanged). See below:

March 5, 2010 version: The pilot **must** advise ATC as soon as practical of their current actions and intentions **IF** executing any procedure other than the published missed approach procedure or any ATC-assigned alternative missed approach procedure.



Version submitted for March, 2011 publication with change shown in shaded text):

In normal conditions the pilot **must** get a clearance from ATC for whatever procedure he/she follows, and in an emergency the pilot must advise ATC as soon as practicable of their current actions and intentions **IF** executing any procedure other than the published missed approach procedure or any ATC-assigned alternative missed approach procedure.

The group consensus is for AFS-410 to arrange the requested meeting, finalize the AIM verbiage (specifically the last paragraph) and coordinate publication on March 10, 2011 to close this issue. Bill also noted there were several other IOUs assigned at the last meeting: 1) AFS-410 was to respond to the AJT-28 memorandum on the issue; 2) NBAA was to facilitate a sub group meeting when the AFS response was completed; and 3) AJT-28 was to evaluate the preamble language for Part 91.116 (now 91.175) and re-assess the need for the requested airport review. Mike and Bill agreed that these 3 IOUs have been overcome by events and are no longer applicable. The current required action is for AFS-410 to schedule a meeting/telcon between AFS-410, AJT-28, and NBAA to finalize and forward the AIM change for publication in the March 10, 2011 AIM.

**ACTION: AFS-410.**

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**MEETING 11-01:** Bill Hammett, AFS-420 (ISI), briefed that the AIM change, adding a note to paragraph 5-4-21h, to resolve this issue was published on March 10, 2011. A copy of the change as published was provided all attendees and is provided below:

*5-4-21h. A clearance for an instrument approach procedure includes a clearance to fly the published missed approach procedure, unless otherwise instructed by ATC. The published missed approach procedure provides obstacle clearance only when the missed approach is conducted on the missed approach segment from or above the missed approach point, and assumes a climb rate of 200 feet/NM or higher, as published. If the aircraft initiates a missed approach at a point other than the missed approach point (see paragraph 5-4-5b), from below MDA or DA (H), or on a circling approach, obstacle clearance is not necessarily provided by following the published missed approach procedure, nor is separation assured from other air traffic in the vicinity.*

*In the event a balked (rejected) landing occurs at a position other than the published missed approach point, the pilot should contact ATC as soon as possible to obtain an amended clearance. If unable to contact ATC for any reason, the pilot should attempt to re-intercept a published segment of the missed approach and comply with route and altitude instructions. If unable to contact ATC, and in the pilot's judgment it is no longer appropriate to fly the published missed approach procedure, then consider either maintaining visual conditions if practicable and reattempt a landing, or a circle-climb over the airport. Should a missed approach become necessary when operating to an airport that is not served by an operating control tower, continuous contact with an air traffic facility may not be possible. In this case, the pilot should execute the appropriate go-around/missed approach procedure without delay and contact ATC when able to do so.*

*Prior to initiating an instrument approach procedure, the pilot should assess the actions to be taken in the event of a balked (rejected) landing beyond the missed approach point or below the MDA or DA (H) considering the anticipated weather conditions and available aircraft performance. 14 CFR 91.175(e) authorizes the pilot to fly an appropriate missed approach procedure that ensures obstruction clearance, but it does not necessarily*

*consider separation from other air traffic. The pilot must consider other factors such as the aircraft's geographical location with respect to the prescribed missed approach point, direction of flight, and/or minimum turning altitudes in the prescribed missed approach procedure. The pilot must also consider aircraft performance, visual climb restrictions, charted obstacles, published obstacle departure procedure, takeoff visual climb requirements as expressed by nonstandard takeoff minima, other traffic expected to be in the vicinity, or other factors not specifically expressed by the approach procedures.*

Bill recommended the issue be closed and the group agreed.

**Status:** Item Closed.